

c.) Remarks

The claims have been amended in order to recite the present invention with the specificity required by statute. No new matter has been added.

The Examiner acknowledged Applicants' claim to priority but noted that certified copies of applications JP Hei. 11-372826 and PCT/JP00/01149 have not been filed. In response, Applicants are currently obtaining such certified copies and will file them as soon as possible. Meanwhile, the Examiner is respectfully requested to acknowledge as well Applicants' claim of priority to U.S. provisional application No. 60/244,594 in the next Patent Office communication.

Claims 4-18 and 20-46 are objected to under CFR §1.75(c). This rejection has been attended to by the foregoing amendment.

Claims 76 and 77 are rejected under 35 U.S.C. §112 first paragraph, as containing subject matter which does not enable one skilled in the art to make and/or use the invention. Although this rejection is respectfully traversed as being without bases in fact, such claims have been cancelled solely in order to reduce the issues and expedite prosecution herein.

Claims 1-46 and 76-77 are rejected under §35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the present invention. In this regard, the Examiner objects to the term "a cell ...which has the potential...". In response, such has been amended to the more idiomatic (and art-accepted) "multipotent". The Examiner also objects to claims 9-14 are indefinite because it is not clear how a cell can be simultaneously positive and negative for a certain receptor.

(In this regard, the typographical error in claim 11, e.g., "CD140-negative" has been changed to "CD144-negative" in conformity with specification page 26, lines 2-3.) As to claims 9, 10 and 12-14, the rejection is not well-understood since none is internally inconsistent. See below

Claim	CD117	CD140	CD34	CD144
8	+	+		
9/8	+	+	+	
10/9	+	+	+	+
11/9	+	+	+	-
12/8	+	+	-	
13/12	+	+	-	+
14/12	+	+	-	-

Withdrawal of this rejection is therefore requested.

Claims 1-46 are rejected under 35 U.S.C § 102(b) as being anticipated by Klug et al (Journal of Clinical Investigation. 98:216-224, 1996), Juttermann et al (Proc. Natl. Acad. Sci. USA. 91:11797-11801, 1991), Pinney et al (Environmental Health Perspectives. 80:221-227, 1989) and Shi et al (Blood 92:362-367, 1998). Claims 1-46 are rejected under 35U.S.C 102(a) as being anticipated by Young et al (Proceedings of the Society of Experimental Biology and Medicine. 221:63-71, 1999) and Makino et al (Journal of Clinical Investigation. 103:697-705, 1999).

This rejection is respectfully traversed as discussed below with regard to each of the cited references. However, prior to setting forth their bases for traversal,

Applicants would like to briefly discuss the salient features of the present invention and *inter alia*, its patentable nature over the prior art.

As the Examiner is aware, the present invention relates to an isolated multipotent stem cell isolated from bone marrow which differentiates into at least a cardiomyocyte, adipocyte, a skeletal muscle cell, or osteoblast and a vascular endothelial cell. These features are not taught by the prior art, as explained below in detail.

Klug, Juttermann and Pinney teach embryonic stem (ES) cells, whereas the pending claims recite stem cells derived from bone marrow in adult tissues. As evidenced by Fuchs, Cell, Vol. 100, 143-155 (2000), copy enclosed in the attached Information Disclosure Statement, ES cells differ in kind from stem cells that reside within an adult organ or tissue. See page 143, 2nd paragraph.

Shi and Makino stem cells that differentiate into endothelial cells from bone marrow, whereas the stem cells of the present invention are multipotential stem cells which additionally differentiate into cardiomyocytes, adipocytes, skeletal muscle cells and osteoblasts. Accordingly, Shi and Makino simply teach stem cells, but plainly do not at all teach multipotent cells according to the present invention.


Finally, the stem cells disclosed in Young are derived from dermal and skeletal muscle cells, whereas the stem cells of the present invention are derived from bone marrow. As shown in Fuchs, the characteristics of adult stem cells changes remarkably depending on the tissues from which they are derived. See page 145, Figure 4. Accordingly, Young does not disclose the multipotential stem cells of the present invention.

In view of the above amendments and remarks, Applicants submit that all of the Examiner's concerns are now overcome and the claims are now in allowable condition. Accordingly, reconsideration and allowance of this application is earnestly solicited.

Claims 1, 6-64 and 78-91 remain presented for continued prosecution, claims 47-63 and 78-91 currently withdrawn with rejoinder thereof being earnestly solicited.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,



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